and stay healthy. Employers must address the challenges and opportunities of an aging workforce, and make workplace accommodations where necessary; for example, some older workers prefer hours flexibility or less strenuous jobs as they age. A key player must be the government, which has already encouraged additional work late in life by lowering Social Security benefits and by eliminating what were once significant financial work disincentives at age 65. But what is really needed, according to Munnell and Sass, is an increase in the earliest age of benefit eligibility, from 62 to 64. This, they acknowledge, is a controversial recommendation, and one that would harm those who cannot work additional years (which they estimate to be 15 to 20% of the workforce), and who tend to be vulnerable on a number of counts (health, education, wage rates and retirement benefits).

There are many strengths of this slim volume. It is very well written and designed for the citizen, not for professionals in the field. It makes excellent use of graphs, charts and footnotes, where considerable technical detail and bibliographic information reside. The simple math behind the authors' major point (please consider working several more years!) is straightforward and compelling. When estimating available assets per year of retirement, additional years of work both increase the numerator (additional earnings and employer pension contributions, additional savings, and higher Social Security benefits) *and* decrease the denominator (years of retirement). They point out in a short summary Chapter 7 that four additional years of work can change the ratio of working years to retirement years from about 2:1 (40:20) to almost 3:1 (44:16).

I am more optimistic than the authors that American men and women will want to and be able to work longer than they used to. In fact, they already are. Between 1950 and 1985, the labor force participation rates of men aged 62, 65, 68 and 70 *declined* by 37% (81.2 to 50.9), 57% (71.7 to 30.5), 64% (57.7 to 20.5) and 68% (49.8 to 15.9), one of the most dramatic demographic changes in recent history. But since then, the retirement environment has changed equally dramatically; it's a whole new world. Social Security has eliminated strong retirement incentives, as have employers, to an extent, by largely moving from defined-benefit to defined-contribution plans, which have no age-specific retirement incentives. Mandatory retirement is gone and not coming back. People are living longer and healthier lives, jobs are less strenuous, and workplace technology has improved. How have workers responded? Between 1985 and 2008, participation rates of men 62, 65, 68 and 70 have *increased* by 11% (to 56.6), 43% (to 43.7), 45% (to 29.8) and 52% (to 24.1)! And female rates have increased even more for these same ages (since 1985, by 52%, 101%, 84% and 90%). In addition, the majority (over 60%) of older Americans now retire gradually, in stages, utilizing bridge jobs on the way out, between full-time career employment and complete labor force withdrawal. The era of earlier and earlier retirement is over, and has been for 25 years. A new era has begun.

I hope that this book has two impacts: encouraging middle-aged workers to think about working a few years longer and encouraging Congress to discuss an increase in Social Security's early retirement age, along with the attendant changes (perhaps to disability policy) required to protect those unable to work longer. If it does, this book, in addition to being a pleasure to read, will make a very valuable contribution to the national retirement policy debate.

Joseph F. Quinn
Department of Economics
Boston College

Pension Strategies in Europe and the United States. Robert Fenge, Georges de Ménil, and Pierre Pestieau, eds. MIT Press, 2008, ISBN 978-0-262-06272-5, 304 pages. doi:10.1017/S1474747210000314

This book is part of the CESifo Seminar Series and presents a collection of theoretical and empirical research papers shedding light on implications of pension system reforms in many countries from various perspectives. Its contributors include international pension experts from academia, research institutes, and central banks. The book is divided into three parts each of which comprises several research articles. Part I, *Pay-as-You-Go Pension Systems*, focusses on raising the statutory and effective retirement age, Part II, *Democratic Sustainability*, explores the political feasibility of pension reforms, while Part III, *Funded Pension Systems*, examines such topics as the shift from defined benefit to defined contribution pension plans, annuitization benefits, as well as optimal asset allocation of life savings.

In developed countries worldwide, public pension systems, which are based on intergenerational transfer payments from the young to the elderly, have been established in the 20th century and have financed consumption needs of retirees since then. Aging populations stresstest public pension systems and may also challenge social peace. The simple mathematical reason is that the internal rate of return of unfunded public pension systems decreases with the declining ratio of the number of workers to the number of retirees so that either social security taxes have to be increased or pension benefits have to be decreased or both. The ultimate goal of reforms should be to maximize the economic welfare of societies. The dilemma is that welfare should be optimally spread among workers, retirees, and future generations.

Raising the effective retirement age may be the most direct way to decrease the ratio of retirees to workers and to keep unfunded pension systems sustainable. The argument for increasing the retirement age is that life expectancies are increasing and that the ratio of inactive years to active years should be kept in balance. In Part 1, Chapter 1, *Optimum Delayed Retirement Credit*, argues in a theoretical model that the increase in pension benefits should be larger than actuarially fair in order to reach the optimal number of workers extending the active years. Or to put it differently the reduction in pension benefits in case of early retirement should be higher than actuarially fair in order to have money available for workers retiring late. Chapter 2, *How Elastic is the Response of the Retirement-Age Labor Supply? Evidence from the French Pension Reform*, shows empirically that the French Pension reform in 2003 has led to an effective delay of retirement. The reason was that the number of years required to entitle an individual to receive a full pension has been extended. Chapter 3, *Optimal Response to a Transitory Demographic Shock*, uses a dynamic general equilibrium model to show that the wave of baby boomers entering retirement can be absorbed by a pension system if workers are allowed to choose their retirement age. Further assumptions are that the social security administration can borrow money in order to cover the transitory budget shock when baby boomers enter retirement and income tax rates are hump-shaped in age.

Governments are facing the responsibility to implement difficult reform measures which might necessitate cutting the living standard which workers and/or retirees became accustomed to over the two generations. Part II of the book is devoted to articles which have examined the feasibility of pension reforms in democratic societies. In Chapter 4, *Demographics and the Political Sustainability of Pay-as-You-Go Social Security*, the authors assess the propensity of United States citizens to prefer higher taxes as compared to lower pension benefits on the basis of age and gender specific present value calculations of social security taxes and benefits. If voters act in their self-interest, young voters will vote for reducing benefits and taxes while older voters prefer higher benefits. Demographic projections and empirical voting rates are used to predict future voting behavior. The key result is that the majority of voters prefer higher social security for the next forty years. Chapter 5, *Free Choice of Unfunded Systems: A Preliminary Analysis of a European Union Challenge*, focusses on the PAYG pension system diversity in the European Union (EU). The idea is that a long run harmonization of pension systems among EU countries could lead to a reduction of barriers in labor market mobility. The aim of the theoretical analysis is to derive in a two country overlapping generations model which type of pension system would be chosen if EU citizens were free to select the system of any EU country. The chapter differentiates pension systems by two key pension system characteristics. The level of social security tax, hence the share of the first pillar, and the degree of intra-generational transfers.

The third part of the book presents articles relating to funded pension pillars. As a reaction to the problems pure PAYG pension systems are facing they have been increasingly replaced by occupational pension systems, the second pillar, and individual pension systems, the third pillar. The share of each pillar and especially the share of the first pillar can vary significantly from country to country. While in one country public pension benefits shall just ensure the subsistence level, in another country public pension benefits allow a good living standard. Reducing the share of the first pillar shifts the burden and the risks of being adequately prepared for retirement from the state to each individual household. Long-term financial planning is a complex matter and can affect households welfare immensely since accumulated life-time savings can amount to multiples of annual labor income. For example, pitfalls include saving too little for retirement, engaging in too risky, illiquid or costly investments, and running out of savings during retirement. Chapter 6, *Public Policy and Retirement Savings Incentives in the United Kingdom*, traces the history of UK pension reforms. The article discusses especially the ability of UK reform measures to encourage citizens to increase private retirement savings in order to be prepared for public pension cuts. The concern is that households may fail to save appropriately due to myopia and lack of financial numeracy.

Additionally, households face the risk of outliving their private financial savings during retirement, an especially severe outcome when public pension benefits are small. *Personal Security Accounts and Mandatory Annuitization in a Dynastic Framework* (Chapter 7), assesses welfare effects of augmenting the public pension pillar with a private pension pillar with and without mandatory annuitization in a general equilibrium model with overlapping generations. The study confirms the result of previous partial equilibrium studies that mandatory annuitization of private savings increases the welfare of most households.

A different way of insuring longevity risk is an employer sponsored defined benefit pension plan. Just like PAYG pension systems, many defined benefit pension funds have run into trouble due to the aging population. Particularly in the Netherlands the share of the occupational pension pillar is sizable with assets amounting to 111 percent of the Netherlands' GDP. Chapter 8, *Aging, Funded Pensions, and the Dutch Economy*, highlights the dilemma faced by the Netherlands' pension funds promising defined benefits. Defined benefit plans have been running into an underfunding situation since they rely on intergenerational risk-sharing very similar to the public PAYG systems. In a general equilibrium overlapping generations model it is shown which measures can be applied to solve the underfunding situation while sticking to the defined benefit framework.

Households have to bear capital market risks when accumulating a large capital stock. This is especially true shortly before entering retirement when the capital stock can amount to multiples of their annual salary so that a drop in capital market prices may drastically affect households wealth. The book's final chapter, Chapter 9, *Optimal Portfolio Management for Individual Pension Plans*, addresses in a normative partial equilibrium framework how much households should save for retirement and especially how they should allocate their savings among risky and riskless assets over the life-cycle. It is concluded that conventional wisdom of decreasing the risky asset fraction with age is not always optimal but depends on the household's individual characteristics.

Although most articles focus on the solution of problems of specific countries, their conclusions can be of general significance. The broad scope of perspectives and approaches used to discuss important issues in worldwide pension systems makes the book very valuable to pension experts and researchers, alike.

Michael Stamos
Allianz Global Investors